PATENT
TS7609 (US)
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re application of	)	
	)	
Richard Hugh Clark, et al.	)	Confirmation No.: 9323
	)	
Serial No. 10/511,127	)	Group Art Unit: 1764
	)	
Filed October 13, 2004	)	Examiner: Ellen McAvoy
	)	
DIESEL FUEL COMPOSITIONS	)	February 16, 2009
	)	

COMMISSIONER FOR PATENTS
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDED APPEAL BRIEF

Applicants hereby submit this Amended Appeal Brief in response to the Notification of Non-Compliant Appeal Brief mailed January 26, 2009 to appeal the final rejection of claims 1-8. Please charge any fees necessary in connection with the filing of this brief to Shell Oil Company Deposit Account No. 19-1800.

Real Party in Interest

The real party in interest is Shell Oil Company.

Related Appeals and Interferences

To the best of the undersigned's knowledge, there is no related appeals and interferences.

Status of the Claims

Claims 1-7 were amended and claim 8 was added in a Preliminary Amendment. Claims 1-8 were finally rejected in the Office Action mailed June 3, 2008 and are on appeal.

Status of Amendments

No amendments to the claims have been filed.

Summary of Claimed Subject Matter

The application currently contains one independent claim 1. The invention as set forth in claim 1 is directed to a method of increasing the cetane number of a gas oil product based on a petroleum derived gas oil to a target cetane number Y comprising: adding to the petroleum derived gas oil a volume amount of a Fischer-Tropsch derived gas oil having a higher cetane number, B, than the petroleum derived gas oil of cetane number, A, wherein the volume amount of added Fischer-Tropsch derived gas oil is less than the volume amount which would be added if linear blending is assumed.

The method of increasing the cetane number of a gas oil product based on a petroleum derived gas oil to a target cetane number Y recited in independent claim 1 is described at page 2, line 16 through page 3, line 9 and in the Example (page 9, line 26 through page 11, line 21). More specifically, the addition of a Fischer-Tropsch derived gas oil having a higher cetane number, B, than the petroleum derived gas oil of cetane number, A, wherein the volume amount of added Fischer-Tropsch derived gas oil is less than the volume amount which would be added if linear blending is assumed is described at page 2, line 22 through page 3, line 9 and in the Example. The Fischer-Tropsch derived gas oil is described at page 5, line 4 through page 6, line 10. The petroleum derived gas oil is described at page 6, line 11 through page 7, line 23.

Further, applicant claims in claim 2 where the invention relates to a method wherein the volume fraction of Fischer-Tropsch gas oil is less than x, wherein x is the volume fraction that

would be added if linear blending assumptions would have been made according to the following equation:

$Y = A + x(B-A)$.

The method wherein the volume fraction of Fischer-Tropsch gas oil is less than x, wherein x is the volume fraction that would be added if linear blending assumptions would have been made according to the following equation:

$Y = A + x(B-A)$

recited in dependent claim 2 is described at page 3, line 21 through line 33.

Yet further, applicant claims in claim 3 where the invention relates to a method wherein the volume fraction x is added as Fischer-Tropsch gas oil in order to increase the cetane number to target value Y, wherein Y and x are related according to the following equation:

$Y = A + (B-A)(-px^2+qx)$,

where p and q are constants such that $1.4>q>1.9$ and $p=q-1$ and wherein A is the cetane number of the petroleum derived gas oil and B the cetane number of the Fischer-Tropsch derived gas oil.

The method wherein the volume fraction x is added as Fischer-Tropsch gas oil in order to increase the cetane number to target value Y, wherein Y and x are related according to the following equation:

$Y = A + (B-A)(-px^2+qx)$,

where p and q are constants such that $1.4>q>1.9$ and $p=q-1$ and wherein A is the cetane number of the petroleum derived gas oil and B the cetane number of the Fischer-Tropsch derived gas oil recited in dependent claim 3 is described at page 4, line 1 through line 9.

Grounds of Rejection to be Reviewed on Appeal

In the final office action, claims 1 was rejected under the nonstatutory double patenting as being unpatentable over claim 20 of U.S. Patent No. 7,189, 269. Claims 1-8, were rejected under 35 U.S.C. 103(a) as being unpatentable over US6,056,793 (Suppes) and US6,663,767 (Berlowitz et al.), considered separately.

Argument

Rejection of Claim 1 based on nonstatutory double patenting over claim 20 of U.S. Patent No. 7,189,269.

As noted by the Examiner in the office action, the conflicting claims are not identical. However, the Examiner states that "they are not patentably distinct from each other because the

patent claims a process for preparing a fuel composition comprising the step of blending a Fischer-Tropsch derived gas oil, an oxygenate, and a base fuel which may be a petroleum derived gas oil . . . ." Applicants claim in claim 1, a method of increasing the cetane number of a gas oil product based on petroleum derived gas oil to a target cetane number Y wherein the volume amount of added Fischer-Tropsch derived gas oil is less than the volume amount which would be added if linear blending is assumed. This is a very specific method of increasing the cetane number of a gas oil product which involves adding less than a particular amount of Fischer-Tropsch derived gas oil. The cited prior art document does not teach this to the skilled person.

Rejection of Claims1-8 under 35 U.S.C. 103(a) as being unpatentable over US6,056,793 (Suppes) and US6,663,767 (Berlowitz et al.), considered separately.

Berlowitz describes a blend of a Fischer-Tropsch derived diesel fuel and a conventional diesel fuel that provides better than expected emissions and a reduced sulfur content. (see abstract and column 2, lines 16-21). However, although cetane number is mentioned (see column 2 lines 41), there is no discussion of any relationship between it and the concentration of components. Berlowitz does not teach applicants claimed invention which is a very specific method of increasing the cetane number of a gas oil product which involves adding less than a particular amount of Fischer-Tropsch derived gas oil which would be added if linear blending is assumed. Berlowitz document does not teach this method to the skilled person in the art.

Suppes discloses a composition which may comprises Fischer-Tropsch derived crude and a blending stock. Examiner states that it "teaches that the blend results in an improvement in one or more desirable fuel properties including, but not limited to, pour point temperature, viscosity and emulsion generated during combustion in a diesel engine. However, at column 19, lines 58 to 59 it states *"The biodiesel mixtures showed an almost linear impact of concentration on cetane number."*. Furthermore, at column 19, lines 61 to 63, it is stated that the **biodiesel** increased the cetane number. Thus, there is no indication that the syncrude increased the cetane number, particularly non-linearly. Column 19, lines 45-51 states that "[w]hen light syncrude is blended with fuels of lower cetane number it would be expected to lower the cetane number of the mixture; this is what happened with the addition of ethanol to the syncrude." This statement only states what is expected in a linear relationship for mixing ethanol and syncrude.

It is specifically recited in applicants claim that adding to the petroleum derived gas oil a volume amount of a Fischer-Tropsch derived gas oil having a higher cetane number, B, than

the petroleum derived gas oil of cetane number, A, wherein the volume amount of added Fischer-Tropsch derived gas oil is less than the volume amount which would be added if linear blending is assumed. Further, the invention relates to a method wherein the volume fraction of Fischer-Tropsch gas oil is less than x, wherein x is the volume fraction that would be added if linear blending assumptions would have been made according to the following equation:

$$Y = A + x(B-A).$$

Yet further, applicant claims in claim 3 where the invention relates to a method wherein the volume fraction x is added as Fischer-Tropsch gas oil in order to increase the cetane number to target value Y, wherein Y and x are related according to the following equation:

$$Y = A + (B-A)(-px^2+qx),$$

where p and q are constants such that $1.4>q>1.9$ and $p=q-1$ and wherein A is the cetane number of the petroleum derived gas oil and B the cetane number of the Fischer-Tropsch derived gas oil.

Accordingly, Applicants respectfully submits that the claims are allowable for the reason articulated above.

Conclusion

Based on the foregoing arguments, Applicants assert that the claims of the present application would not have been obvious in view of the cited references. It is respectfully requested that this appeal be upheld and that the application be sent back to the Examiner for allowance.

Respectfully submitted,

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CLAIMS APPENDIX

1. A method of increasing the cetane number of a gas oil product based on a petroleum derived gas oil to a target cetane number Y comprising: adding to the petroleum derived gas oil a volume amount of a Fischer-Tropsch derived gas oil having a higher cetane number, B, than the petroleum derived gas oil of cetane number, A, wherein the volume amount of added Fischer-Tropsch derived gas oil is less than the volume amount which would be added if linear blending is assumed.

2. The method of claim 1, wherein the volume fraction of Fischer-Tropsch gas oil is less than x, wherein x is the volume fraction that would be added if linear blending assumptions would have been made according to the following equation:

$$Y = A + x(B-A),$$

3. The method of claims 1, wherein a volume fraction x is added as Fischer-Tropsch derived gas oil in order to increase the cetane number to target value Y, wherein Y and x are related according to the following equation:

$$Y= A + (B-A)(-px2 + qx),$$

where p and q are constants such that $1.4 > q > 1.9$ and $p = q-1$ and wherein A is the cetane number of the petroleum derived gas oil and B the cetane number of the Fischer-Tropsch derived gas oil.

4. The method of claim 3, in which x is greater than 0.02 and less than 0.7.

5. The method of claim 4, in which x is less than 0.5.

6. The method of claims 1-5, of which the cetane number, A, of the petroleum derived gas oil is greater than 40 and less than 70.

7. The method of claims 1, of which the cetane number of the petroleum derived gas oil is measured using near infrared spectroscopy.

8. The method of claim 2, in which a volume fraction x is added as Fischer-Tropsch derived gas oil in order to increase the cetane number to target value Y, wherein Y and x are related according to the following equation:

$$Y = A + (B-A)(-px^2 + qx),$$

where p and q are constants such that $1.4 > q > 1.9$ and $p = q-1$ and wherein A is the cetane number of the petroleum derived gas oil and B the cetane number of the Fischer-Tropsch derived gas oil.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.